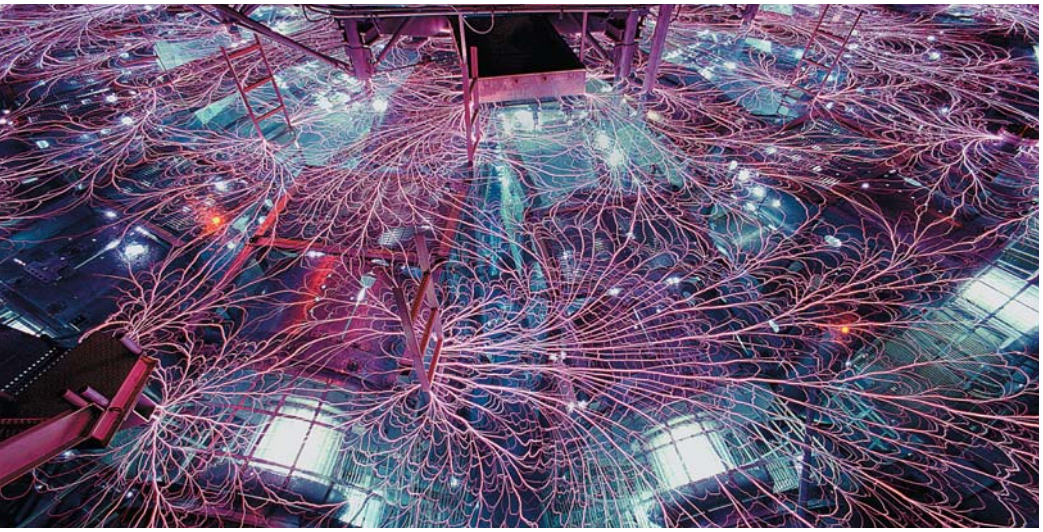
Sandia National Laboratories

Fact Sheet

National Security Missions/Background

Sandia National Laboratories is one of America's premier research and development laboratories. Our primary business is national security, and our core purpose is to help our nation secure a peaceful and free world through technology.



Sandia's huge Z machine, the world's most powerful X-ray source, is used for fusion energy research and to test the effects of radiation on materials.

Sandia was established in Albuquerque, N.M., in 1945 during the Manhattan Project, which produced the first nuclear weapons, and began operating as an independent laboratory in 1949. Our Livermore, Calif., facilities opened in 1956. Sandia has since grown into a broad national security laboratory encompassing a variety of technologies and programs. Our work involves missions in five key areas:

- Nuclear Weapons — Ensuring the stockpile is safe, secure, reliable, and can support our nation's deterrence policy,
- Nonproliferation and Assessments — Reducing the proliferation of weapons of mass destruction, the threat of nuclear accidents, and the potential for damage to the environment,
- Military Technologies and Applications — Helping to maintain superiority of our armed forces,
- Homeland Security — Helping to protect our nation against terrorism, and
- Energy and Infrastructure Assurance — Keeping America's resources and information flowing.

Lockheed Martin Corp. manages Sandia for the U.S. Department of Energy's (DOE's) National Nuclear Security Administration. Sandia also works for, and partners with, other DOE agencies, the Department of Defense, Department of Homeland Security, other federal/state/local government agencies, private industry, and academic institutions to accomplish our missions.

Research Foundations/ Emerging Areas

Sandia conducts a variety of ongoing research and development (R&D) projects in support of our key missions listed above. Most R&D projects are in one of these areas:

- Materials and Process Sciences,
- Computational and Information Sciences,
- Microelectronics and Photonics Sciences,
- Engineering Sciences,
- Pulsed Power Sciences,
- Manufacturing Sciences,
- Surety Sciences,
- Chemistry and Earth Sciences.

Technology Partnerships Benefit America

Sandia works closely with industry, universities, and other government agencies to bring new technologies to the marketplace. The Labs may negotiate with industry to sign cooperative research and development agreements that permit the labs to collaborate with industry on mutually beneficial research. Other options for pursuing

Sandia's rocket sled track was the site of this crash test of an F-4 to estimate the effect of a plane crash into a heavily reinforced concrete structure.

shared interests include licensing agreements, technical assistance, use of unique Sandia facilities, technical personnel exchanges, and memoranda of understanding.

Many technologies developed at Sandia benefit Americans directly or indirectly. A few notable examples:

- The laminar-flow cleanroom—used worldwide for microelectronics and pharmaceutical manufacturing and hospital surgery—was invented at Sandia in 1960.
- Sandia pioneered bomb-disablement technologies that allow technicians to "render safe" both crude and sophisticated terrorist-type explosive devices without approaching the bombs.

Mobile robots developed at Sandia have military, law-enforcement, and environmental cleanup applications.

Sandia developed the portable MicroHound™ chemical sniffer for law-enforcement and homeland security needs.

- MicroChemLab™ technology developed by Sandia has made possible handheld and unmanned vehicle-carried systems for detecting and identifying chemical and biological agents for homeland security, defense, and environmental applications.
- Sandia's contributions in synthetic aperture radar (SAR), an all-weather, day/night imaging technology, have enabled mapping with a precision thousands of times greater than standard maps. SAR has many military and civilian applications, including aiding in search and rescue operations.
- Five generations of Sandia-developed radiation-hardened microchips have ensured that defense and space hardware electronics can operate in high-radiation environments.

Workforce/Budget

Sandia has about 8,300 employees, located mainly in Albuquerque, New Mexico, and Livermore, California. Others work at the Pantex Plant near Amarillo, Texas; the Waste Isolation Pilot Plant near Carlsbad, New Mexico; the Kauai Test Facility, in Hawaii; and the Tonopah Test Range, in Nevada. Our workforce consists of highly educated and skilled engineers, scientists, technologists, and administrative support staff. About 1,480 of our employees hold doctoral degrees and about 2,390 hold master's degrees.

Our fiscal year 2004 budget was about $2.2 billion. Department of Energy funding was about $1.6 billion, and other funding about $640 million.

Information

For more details about Sandia, please visit our web site at **www.sandia.gov**. *Our 20-page overview booklet is also available on the web at* **www.sandia.gov/news-center/publications/corp-info/Overview.pdf** *or you may contact the Public Relations and Communications Center (505) 844-4902 for a printed copy.*

Sandia is a multiprogram laboratory operated by Sandia Corporation, a Lockheed Martin Company, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. CA.MV.10.04 SAND No. 2004-4953P.